सी.एस.आई.आर.-एकीकृत कौशल विकास पहल के अंतर्गत

CSIR-CIMAP

Training on

Advanced Instrumentation & Analytical Techniques for Natural Products [AIAT-22]

[16 – 20 May 2022]

CSIR Integrated Skill Initiative

CIRCULAR

Background

Plants have the ability to produce a wide range of chemicals that are used to perform important biological functions, as well as to defend against attack from insects, fungi, and herbivorous mammals. Photochemical, particularly small molecules have a number of applications. The harnessing of herbs for human health management is centauries old science, practiced in our country. Natural products serve as a basic skeleton and play a crucial role in modern drug discovery programs. The number of drugs and supplements in use today are derived from natural products. The process of drug development and quality control required multi-skill. The identification of lead molecules and quality assurance control of herb/products required skill and knowledge of analytical instrumentation. The requirement for consistently high standards of competence in chromatography-spectroscopy and analytical science is now, more than ever, a matter of priority for industries pharmaceutical, chemical, biotechnological research organizations mandated for applied research.

Over the years the development of these tools has become increasingly sophisticated to make their use simpler and now these have become an indispensable tool for R & D work. To keep pace with the sophistication in these tools, it is necessary to simultaneously upgrade the skills of all concerned in this field as a human resource development venture. To fulfill this important objective, CSIR-CIMAP is organizing five days of summer training on applications and principles of working of sophisticated instrumentation from 16-20 May 2022.

About CSIR-CIMAP

CSIR-CIMAP is a national R&D Laboratory of CSIR having a unique mandate on medicinal and aromatic plants for their production and exploitation as a value-added product for the industry and society. The research and development program of the institute is greatly supported by modern sophisticated instrumentation to provide a base for the development of technologies through plant sciences, Lucknow "*The Historical City of Nawabs*" has developed as an advanced city of science education and research

with a good number of prestigious R & D and academic institutions like CDRI, NBRI, IITR, IISR, IET, BSIP, KGMU, SGPGI, IIM and many more including Lucknow University.

Objective

The course will provide sound knowledge in natural product extraction, separation, purification, and identification practices of phytochemicals. The focus of the training program was to enhance the experience and practical knowledge of chromatographic and spectroscopic research in natural products development and develop human resource capacities by offering training to personnel from industry, academic institutions, and government laboratories.

Course Content

During the course, there will be theory lectures on basic instrumentation principles, applications, and also practical exposure to the use of sophisticated instruments and analysis of data.

1. **Module 1:** Introduction to Medicinal and Aromatic Plants (MAPs) Analysis
2. **Module 2:** Isolation and purification of natural products
3. **Module 3:** HPTLC-Basics, Instrumentation and its application in MAPs
4. **Module 4:** HPLC-Basics, Instrumentation and its scope in natural products
5. **Module 5:** GC & GC-MS-Basics, Instrumentation, and its scope
6. **Module 6:** LC-MS-Basics, Instrumentation and its scope
7. **Module 7:** FT-NIR & Inductively coupled plasma atomic emission spectroscopy (ICP-AES) -Basics, Instrumentation and its scope
8. **Module 8:** NMR-Basics, Instrumentation and its application in small organic molecule structure elucidation

Who should participate?

- The type of training/exposure has been planned to be useful for scientists, academicians, industry, and research scholars equally.
- No doubt students/ scholars related to the fields will be highly benefited as they will have exposure to modern R & D tools. This course is designed to keep the requirements of both beginners and intermediate-level users.
- The lectures, supplemented by problems sets, PowerPoint slides, and hands-on training, will provide the fundamentals needed to understand the techniques and instrumentation. *No prior experience in advanced computation, theoretical chemistry, or physics is required for this course*.
- Some experience in chromatography or introductory knowledge of chemistry is desirable but not necessary.

Course detail along with fee structure

Duration	**:**	05 days (Residential course).
Batch size	**:**	20 [First come first served basis]
Mode of Registration	**:**	Interested candidates have to submit the Registration Form along with the course fee (available on the CSIR-CIMAP website).
Registration Fee	**:**	Students: INR 7,500/- Industries/Institution sponsored: INR 15,000/-
Payment mode	**:**	The **demand draft** in favour of **"Director, CSIR-CIMAP**, Lucknow "payable at Lucknow or through **online transfer**.

Bank Detail for online transfer-

Account No.	**:**	30267691783
Account holder	**:**	Director, CIMAP, Lucknow
Bank Address	**:**	State Bank of India, Main Branch, Hazaratganj, Lucknow
Branch Code	**:**	000125
IFSC code	**:**	SBIN0000125
MICR code		226002002

Note: No Refund is permissible in any circumstances. The selected candidates will be informed by phone/email.

Accommodation	**:**	Accommodations on a twin-sharing basis will be provided in our guest house.
Dates	**:**	**16 – 20 May 2022**
Timings	**:**	**9:30 AM to 6:00 PM**

How to Apply

The application along with brief bio-data should be forwarded to the Director, CSIR-CIMAP, Lucknow. The criteria of selection will be the relevance of the applicant with training as well as covering maximum geographical and institutional (R&D/ academic/ industries) representation. The last date for receiving the application is 10 May 2022. **No TA/DA will be admissible to the participants for attending the training/school.**

Course Structure

There will be lectures and practical demonstrations by the faculty of leading scientists and experts in different fields. The training school will be of five days duration with long hours of working from early morning to late evening. The participants will be exposed to different aspects of natural product chemistry like Isolation, chromatographic purification, characterization of molecules with help of modern sophisticated instruments. The participants are expected to fully involve themselves in training without leave. The hostel stay will be compulsory for residential trainees due to late hours of working.

For further communications write or call to:

Director

CSIR-Central Institute of Medicinal and Aromatic Plants
PO- CIMAP
Lucknow-226015 [Uttar Pradesh]
Phone: 0522-2718505
Fax : 0522-2719072
E-mail: director@cimap.res.in,
Website: www.cimap.res.in

Course Coordinator

Dr. Karuna Shanker
Phone: 0522- 2718580/579,
Mobile: 09415329718
E-mail: k.shanker@cimap.res.in

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Contact Persons for accommodation & registration: Dr. Karuna Shanker (9415329718);
Dr. Neerja Tiwari (08447654304)